

# **EXHIBIT E**

Oct-04-05 12:38pm From-WoodcockWashburn

+2155689438

T-649 P.004/010 F-996

**James K. Roberge**

**Personal Information**

Birthdate and Place: June 13, 1938, Jersey City, New Jersey

Marital Status: Married, two children

Security Clearance: Secret or higher, continuously since 1961

Home Address: 111 Lexington Road  
Lincoln, Massachusetts 01773  
Telephone: (781) 259-1811

Business Address: Room 38-483, Massachusetts Institute of Technology  
Cambridge, Massachusetts 02139  
Telephone: (617) 253-5994  
(781) 981-4088

**Education**

Massachusetts Institute of Technology, Cambridge, Massachusetts

September 1956 to June 1963, September 1964 to September 1966

Degrees: Sc.D., Electrical Engineering, 1966  
S.M., Electrical Engineering, 1962  
S.B., Electrical Engineering, 1960

**Professional Interests**

Electronic circuits and systems design. Application of feedback techniques.

Interesting business situations.

**Professional Experience**

Massachusetts Institute of Technology: Research Assistant, Research Engineer,  
Postdoctoral Research Associate, Assistant Professor of Electrical  
Engineering, Associate Professor of Electrical Engineering, Professor of  
Electrical Engineering, 1960 to date.

M.I.T. Lincoln Laboratory, Lexington, Massachusetts: Visiting Scientist,  
Summers since 1969.

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Kearfott Company, Little Falls, New Jersey: Engineering Trainee and Engineer,  
Summers, 1958 – 1961.

Consultant: 1961 to present (see last four pages for list of clients).

#### Major Publications

Book, Analog Circuit Design: Art, Science, and Personalities, ed. Jim  
Williams, Butterworth-Heinemann, 1991. (Section 3.10), *Propagation of the  
Race (of Analog Circuit Designers)*, p. 79-88.

Video Course, *Electronic Feedback Systems*, MIT Center for Advanced Engineering  
Studies, 1986. Includes twenty 50-minute lectures and a study guide.

Book, Operational Amplifiers: Theory and Practice, John Wiley & Sons,  
New York, New York, 1975.

Book, (Chapter 12), *Methods of Experimental Physics*, Volume 2 (Electronic  
Methods), Second Edition, Academic Press, New York, New York, 1975.

Book, (Coauthor with B. D. Wedlock), *Electronic Components and Measurements*,  
Prentice Hall, Englewood Cliffs, New Jersey, 1969. (Also translated into  
Spanish, *Componentes Electronicos y Mediciones*.)

Also the author or coauthor of approximately 30 technical publications and papers.

#### United States Patents

Application Number 60/351,065, System for Regulating Optical Output Power

Application Number 09/627,995, Multi-element Capacitive-Based Vibration  
*Measurement Systems*

Number 6,320,334, *Controller for a Linear Accelerator*

Number 5,723,980, *Clearance Measurement System*

Number 5,189,376, Method for Measurement of Capacitance, with Application  
*To Linear Measurement of Distance*

Number 5,111,065, Diode Driver circuit Utilizing Discrete-Value DC Current Source

Number 5,023,431, Linearized Thermal Feedback Circuit and Temperature

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*Controller Circuit Utilizing the Same*  
Number 4680554, Real Time Network Receiver System Fast Settling Amplifier  
  
Number 4300094, *Finish Measuring Method and Apparatus*  
Number 3940979, *High-Accuracy Optical Torquemeter*  
Number 3857021, Multiplying Current Mode Digital-to-Analog Converter  
  
Number 3670180, *Intervalometer*

**Professional Society Affiliations:**

Senior Member	I.E.E.E.
Member	Eta Kappa Nu
Member	Sigma Xi
Member	Tau Beta Pi

**Miscellaneous:**

Western Electric Fund Award for Excellence in Instruction of Engineering  
  
Students, presented by the New England Section of the American Society for  
Engineering Education, 1976.

**Consulting Clients:**

Present: (There has been some professional interaction within the past five years).

Adaptive Optics, Incorporated, Cambridge, MA  
Aerogage Corporation (also co-founder), Sterling, MA  
Agfa Imaging Division, Hudson, NH  
Analog Devices, Incorporated, Wilmington, MA  
Brown & Bain, Phoenix, AZ  
Cooley Godward, LLP, Palo Alto, CA  
Cosman Corporation, Belmont, MA  
E. I. Du Pont de Nemours & Company, Wilmington, DE  
Edwards and Angell, LLP, Boston, MA  
Fish & Neave, New York, NY  
Fitzpatrick, Cella, Harper and Scinto, New York, NY  
Hale & Dorr, LLP, Boston, MA  
Kirkpatrick & Lockhart, LLP, Pittsburgh, PA  
Latham & Watkins, New York, NY  
Leydig, Voit & Mayer, Limited, Chicago, IL  
Malachite Technology, Incorporated, Methuen, MA  
PhotonEx, Incorporated, Maynard, MA  
Quality Engineering Associates, Incorporated, Lexington, MA

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Spectra Systems, East Providence, RI  
Sycamore Networks, Incorporated, Tewksbury, MA  
3-M Telecom Systems Division, Austin, TX  
Wood, Herron & Evans, Cincinnati, OH  
Woodcock, Washburn, Kurtz, Mackiewicz & Norris, LLP, Philadelphia, PA

Post:

AT&T, New York, NY  
Abcor, Incorporated, Cambridge, MA  
ADAPS, Incorporated, Dedham, MA  
Addison-Wesley, Incorporated, Reading, MA  
ADE Corporation, Newton, MA  
Aetna Telecommunications Laboratories, Westborough, MA  
American Optical Corporation, Southbridge, MA  
Applecon, Incorporated, Burlington, MA  
Arthur D. Little, Incorporated, Cambridge, MA  
Avco-Everett Research Laboratory, Incorporated, Everett, MA  
Avco, Systems Division, Wilmington, MA  
Baker & Botts, Washington, D.C.  
Ballard, Spahr, Andrews & Ingersoll, Philadelphia, PA  
Banner, Birch, McKie & Beckett, Washington, D.C.  
BBN, Cambridge, MA  
Bell Laboratories, North Andover, MA  
Bingham, Dana & Gould, Boston, MA  
Block Engineering, Incorporated, Cambridge, MA  
Boston Technology, Cambridge, MA  
Bowcan Engineering Corporation, Boston, MA  
Brandeis University, Waltham, MA  
Cassidy, Schade & Gloor, Chicago, IL  
Cesari & McKenna, Boston, MA  
Codem Systems, Incorporated, Hollis, NH  
Coherent Diagnostic Technology, LLC, Concord, MA  
Computek, Incorporated, Cambridge, MA  
Comsat Laboratories, Clarksburg, MD  
Concord Control, Incorporated, Boston, MA  
Control Logic, Incorporated, Natick, MA  
Cyberstar, Incorporated, Santa Rosa, CA  
Data Systems International, Incorporated, Woburn, MA  
Dense, Erdmann & Clapp, Burlington, VT  
Design Automation, Incorporated, Lexington, MA  
Dewey, Ballantine, Bushby, Palmer & Wood, New York, NY  
Diano Corporation, Woburn, MA  
Diversified Technologies, Incorporated, Lexington, MA  
Dolan and Jenner, Incorporated, Lawrence, MA  
Education Development Center, Newton, MA  
Ekiron Applied Imaging, Incorporated, Bedford, MA

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Electro-Biology, Incorporated, Fairfield, NJ  
Emerson Electric Company, White Rodgers Division, St. Louis, MO  
G.P.S. Instrument Company, Incorporated, Newton, MA  
Foley, Hoag & Elliott, Boston, MA  
GCA Corporation, Andover, MA  
General Adjustment Bureau, Incorporated, Boston, MA  
General Resistance, Incorporated, Mount Vernon, NY  
General Scanning, Incorporated, Watertown, MA  
The Gillette Company, Cambridge, MA  
Gould Incorporated, Rolling Meadows, IL

Also past member, Electronic Products Business Section Operating Board

Greene & Hoffman, Boston, MA  
GW Instruments, Incorporated, Somerville, MA  
Harris, Incorporated, Melbourne, FL  
H-H Aerospace Design Corporation, Cambridge, MA  
Heidelex Corporation, Chelmsford, MA  
Helitron, Incorporated, Boston, MA  
Holt, Rinehart, and Winston, Incorporated, New York, NY  
Honeywell, Incorporated, Lexington, MA  
Hughes Danbury Optical Systems, Incorporated, Danbury, CT  
Hume, Clement, Brinks, Willian & Olds, Limited, Chicago, IL  
Hybrid Systems Corporation, Bedford, MA

Also past member, Board of Directors

Hybrid Division of Sipex Corporation, Billerica, MA  
INT Labs, Incorporated, Austin, TX  
International Equipment Company, Needham Heights, MA  
Irell & Manella, LLP, Los Angeles, CA  
Itek Composition Systems, Incorporated, Wilmington, MA  
John Wiley and Sons, Incorporated, New York, NY  
Kaber Imaging Incorporated, Hudson, NH  
Kaye Instruments, Incorporated, Bedford, MA  
Keithley Instruments, Incorporated, Cleveland, OH  
Kenyon & Kenyon, New York, NY  
Lasertron, Incorporated, Burlington, MA  
LNR Communications, Incorporated, Happaage, NY  
M/A-COM, Waltham, MA  
Mahr Leonard Management Company, Dallas, TX  
Mech-EI Industries, Incorporated, Woburn, MA  
Micro Pure Systems, Incorporated, Smithfield, RI  
Microsensors, Incorporated, Holliston, MA  
Midland Ross Corporation, Livingston, NJ  
Ministry of Industry and Energy, Algeria  
Misomex International, Incorporated, Hudson, NH  
M.I.T. Lincoln Laboratory, Lexington, MA  
Morrison & Foerster, San Francisco, CA  
Newport Engineering, Incorporated, Fountain Valley, CA

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New York State University, Stony Brook, NY  
Northeastern University, Boston, MA  
Northrop Corporation, Norwood, MA  
Nussbaum, Owen & Webster, Washington, D.C.  
Nutter, McClennan & Fish, Boston, MA  
Ohio State University, Aero and Astro Research Laboratory, Columbus, OH  
Palmer & Dodge, Boston, MA  
Phoenix Electric Company, Canton, MA  
Polyonics Corporation, Newburyport, MA  
PRC, Incorporated, Reston, VA  
Prentice Hall, Incorporated, Englewood Cliffs, NJ  
Prime Technology, North Branford, CT  
Proconics International, Incorporated, Woburn, MA  
Prudential Securities, Incorporated, New York, NY  
Pyramid Technical Consultants, Incorporated, Waltham, MA  
Raytheon Company, Equipment Development Laboratories, Wayland, MA  
Raytheon Company, Hybrid Circuits Operation, Quincy, MA  
Raytheon Company, Microwave Tube Operation, Waltham, MA  
Raytheon Company, Special Microwave Device Operation, Northboro, MA  
RCA, Somerville, NJ  
Reflection Technology, Incorporated, Waltham, MA  
Revlon, Incorporated, New York, NY  
Rockwell International Science Center, Thousand Oaks, CA  
Ross Control Corporation, Waltham, MA  
Schlumberger Technology Corporation, Ridgefield, CT  
Schnader, Harrison, Segal & Lewis, Philadelphia, PA  
Semmes, Bowen & Semmes, Baltimore, MD  
Sensor Metric Corporation, Holliston, MA  
Stocker and Yale, Incorporated, Beverly, MA  
Teledyne Philbrick, Incorporated, Dedham, MA  
Teradyne, Incorporated, Boston, MA  
Townley & Updike, New York, NY  
Townsend & Townsend, Palo Alto, CA  
Transportation Systems Center (U.S. Government), Cambridge, MA  
Ultra Clean International Corporation, Woburn, MA  
UNEX Laboratories, Incorporated, Danvers, MA  
United Technologies Corporation, East Hartford, CT  
Varian Extrion, Incorporated, Gloucester, MA  
Vibro-Meter Corporation, Billerica, MA  
Visidyne Corporation, Burlington, MA  
Weingarten, Schurgin, Gagnebin & Hayes, Boston, MA  
Wolf, Greenfield & Sachs, P.C., Boston, MA  
Wolin & Rosen, Chicago, IL

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**Additional Publications (within last 10 years):**

Velazquez, S.R.; Nguyen, T.Q.; Broadstone, S.R.; Roberge, J.K., *A hybrid filter bank approach to analog-to-digital conversion*, Proceedings of the IEEE-SP International Symposium on

Time-Frequency and Time-Scale Analysis (Cat. No.94TH8007) p.116-19 (IEEE, New York, NY, 1994)

Kribbe, T.E.; Swanson, E.A.; Roberge, J.K., *Spatial tracking using an electro-optic modulator and a single-mode optical fiber*, Proceedings of the SPIE - The International Society for Optical

Engineering, vol.1635, p.309-17 (1992)

Denison TA; Roberge JK; Branton D, *A new integrating patch clamp amplifier eliminates the continuous "resets"*, BIOPHYSICAL JOURNAL, V. 78, N. 1, PP. 1576-1576 (2000)